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ABSTRACT

The vocationalists are highly critical of the liberal arts preparation propounded by the generalists. This criticism is based on the view that students today are primarily concerned with gaining usable skills for entrance to the work for entrance than gaining a broad intellectual background. The generalists upbraid the vocationalists for promoting mere "training" for work that may quickly become obsolete rather than "education" for a career with a future. What does seem to be agreed to is that changing expectations, technology, composition of student bodies, and manpower needs of society require that our postsecondary educational system be carefully reviewed and improved in response to current and future needs. This outline of the arguments of the vocationalists and the generalists suggests some possible ways in which higher education can accommodate the objectives of both. (Author)

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DIRECTIONS OF HIGHER EDUCATION TOWARD CAREERS

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ABSTRACT

After the high enrollments, unquestioning acceptance, and abundant funding of higher education in the sixties, the leveling and dropping enrollments and demands for accountability of the seventies have given rise to much speculation as to the future of higher education. One major trend that appears to be evolving is a greater emphasis on the goal of higher education to prepare one for employment.

The vocationalists are highly critical of the liberal arts preparation propounded by the generalists on the basis that students today are most concerned with gaining usable skills for entrance to the work force rather than a broad intellectual background. The generalists upbraid the vocationalists for promoting mere "training" for work which may quickly become obsolete rather than "education" for a career with a future. What does seem to be agreed upon is that changing expectations, technology, composition of student bodies, and manpower needs of society require that our post secondary educational system be carefully reviewed and improved upon in response to current and future needs. This paper outlines the arguments of the vocationalists and the generalists and suggests some possible ways in which higher education can accommodate the objectives of both - some means of meshing the goals of liberal education and career preparation.

DIRECTIONS OF HIGHER EDUCATION TOWARD CAREERS -Karen H. Knierim, West Virginia University *

Vocationalism Versys Liberal Arts or General Education

After the rapidly increasing enrollments, unquestioning acceptance, and abundant funding of higher education in the 60's, the leveling enrollments and demands for accountability of the 70's have given rise to much speculation as to the future of higher education in America. One major trend that appears to be evolving is a greater emphasis on the goal of higher education to prepare one for employment. And controversy between the vocationalists and generalists has ensued.

The vocationalists are highly critical of the liberal arts preparation on the basis that students today are most immediately concerned with gaining usable skills for entrance to the work force rather than a broad intellectual background. The generalists upbraid the vocationalists for promoting mere "training" for work which may quickly become obsolete rather than "education" for a career with a future. What does seem to be universally agreed upon is that changing expectations, changing composition of student bodies, changing manpower needs of society, and changing technology require that our post secondary educational system be carefully reviewed and improved upon in response to current and future needs.

In the past, with an oversupply of students seeking entrance to our institutions of higher education, institutional survival was not dependent upon fulfilling every desire and expectation of students. However, a dropping birth rate and leveling college enrollments indicate that institutional competition for students will increase in intensity over the next decade. A number of sources, including the Carnegie Commission (1973a, pp. 65-66)

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and the American Council on Education/UCLA Cooperative Institutional Research Program (1973), have identified trends in enrollment patterns detrimentally affecting traditional college attendance. There has been an accelerated shift away from traditional academic programs and into vocational programs of all types in four-year colleges and universities, in community colleges, as apprenticeships, and so forth.

This evidence of a shift in student interests toward job preparation was reinforced by a comparative study of enrollment shifts and trends in college majors at West Virginia University, conducted in fall, 1975 (Knierim, 1975a). A look at the academic majors of first-time freshmen in the falls of 1972 through 1975 at WVU indicates a trend in interests toward more vocationally oriented programs, a trend which has been documented nationally as well by a College Entrance Examination Board (CEEB) survey (Chronicle, 9/15/75, p. 19). The attached table shows this trend in detail. At WVU over the past four years the numbers and percentages of first-time freshmen have increased most in the areas of agriculture and forestry, business and economics, and engineering. The CEEB study showed the highest percentages of high school graduates in 1975 nationally intended to major in the areas of health sciences, business and economics, education, engineering, and biology.

In another study at West Virginia University in June 1975, a survey was made of undergraduate students who were accepted at the University but did not enroll, in order to determine their reasons (Knierim, 1975b). Fourteen percent of these people specifically cited reasons related to vocational interests, such as: difficulty gaining acceptance in desired vocational programs, preferred a vocational school, wanted work experience, preferred a school which had cooperative education programs, etc. Another twenty-one

percent cited reasons related to the curriculum of the university, such as "program of interest not offered," bringing the total who did not enroll at WVU for potentially vocational reasons to 35% of those surveyed.

These trends obviously have great significance. In order to survive, our higher education system must strive for "relevance" in the eyes of the students, the government, and employers, all of which it is financially dependent upon. Vocationalism definitely appears to be a "relevant" goal for higher education in the eyes of the government. Specifically the Office of Education is encouraging vocationally oriented education, as are state governments. Although this emphasis and accompanying funding has thus far been aimed primarily at elementary and secondary schools, the implication is clear that the government supports career preparation as a goal for all levels of education. The changes, even at the elementary and secondary levels, that increased emphasis on vocationally oriented education may bring, will have important implications for the universities. As more high school graduates have specific vocational objectives, universities will have to change to meet the needs of this new type of student.

Another trend evident in federal funding that indirectly increases support of vocationalism in higher education is that of reduced funding for categorical programs which aid institutions, and instead giving financial aid to the students so that they may attend institutions of their choice. The federal student-aid programs provide students with the right to receive financial aid even if they attend proprietary, trade, or technical schools. This radical departure from past federal policy will undoubtedly add to the redistribution of students away from liberal arts programs in colleges and universities.

Business and industry, too, seem to be leaning toward vocationalism. In Spring 1974 in Collegiate News and Views, James and Decker discussed a study done to determine business personnel officers' perception of "ideal" courses of study for college recruits (1974, pp. 26-30). The majority of the respondents said their company was more interested in the business major than the liberal arts major. The College Placement Council found similar results in a May 1974 survey of almost 2,000 employers (1975, p. 9). Overall, it was found that liberal arts hiring has decreased compared with that of five years ago. During the 1973-74 college year, 32% reported hiring no liberal arts graduates compared with 24% five years ago.

In spite of the conflict which continues to exist over whether liberal arts or vocational education is most appropriate for administrative positions, there is no question that we are living in an increasingly technological society. Not everyone can reach the executive and management levels regardless of how accessible higher education is made to them; skill training must be done somewhere—either on—the—job or in the institutions. A number of prominent figures in the business world are currently favoring the incorporation of more such training in our institutions (Besse, 1974, p. 171).

In addition to the students', government's, and business world's present enthusiasm for vocationalism, some leading academicians are among its advocates. In an article in <u>Change</u>, Earl McGrath quoted Carl Kaysen, of the Institute for Advanced Studies in Princeton, that college is "...primarily training in a profession. This should become the norm; it need not be the universal practice any more than liberal education is now (1974b, p. 25)."
There are many similar statements of support for vocationalism (Millard, 1972).

This vocationalism or economic theme for higher education is not a new one. The Carnegie Commission on Higher, Education has commented that the

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economic purpose of higher education was principally developed in the late nineteenth century after more and more occupations began to draw on the theoretical base which universities could supply and thus started to become professions. This economic purpose increased its momentum during and after World War II, with emphasis upon research and development, and upon preparing highly trained "manpower" (1973b, pp. 60-61). Nonetheless, this economic theme has only been one of several themes in higher education, others being personal development, service to society, etc. During the fifties and sixties, liberal arts were emphasized as the best means of achieving these goals.

Why, now, are people so disenchanted with the emphasis on liberal arts in higher education? There are many reasons, the most obvious and most often cited being the current difficulties liberal arts graduates are having finding satisfying employment. Marland identified this problem in his book, Career Education:

The crunch for the college graduate has come from both ends-diminishing job prospects for the college graduate and a growing number of students completing college. By 1980, for example, there will be nearly 650,000 more students awarded BA's than there were in 1960. And this will occur during a period when 80 percent of the new jobs available in the 1970's will require training and skills, but not necessarily a four-year degree. The new technologies and service industries have created a new middle ground of job opportunities that require two years of training beyond high school but do not require a four-year college degree (1974, pp. 78-79).

Another, perhaps equal reason for the disenchantment with our present

The increasing accessibility of higher education has enabled more students from minority groups and disadvantaged classes to penetrate the system.

Students from a disadvantaged background generally seem to prefer educational programs that appear to promise tangible career benefits rather than those emphasizing personal development or knowledge for its own sake (Hitchcock, 1973, p. 48).

Students are not alone in their disenchantment with the present educational system. The faculty themselves are unsure of the worth of what they are teaching. Currently there seems to be a lack of conviction to challenge the trend toward vocationalism. Nonetheless, faculty rarely attribute high priority to vocational preparation as a goal of higher education. Perhaps they fear for their futures. The University of Houston, in doing an Inventory of Institutional Goals, found that faculty attached significantly less importance to the goal of vocational preparation than did students, administrators, or alumni (1974, p. 11).

In spite of all the criticisms and doubts of the utility of the liberal arts degree, even the most adamant vocationalists are hesitant to suggest its complete abandonment. The argument of the necessity to "educate" rather than "train" in our institutions of higher education for the betterment of society is stressed over and over again. The proponents of liberal arts argue that given the current situation--rapidly advancing technology, ever-expanding bodies of knowledge--the educational system must teach creativity and adaptability rather than skills which may shortly no longer be needed. Men such as Albert Einstein; Abraham Maslow, Abraham Kaplan, Lewis Mumford; Alvin Toffler; and Woodrow Wilson are only a few of the great men who have put forth the argument for general education through the years (Truman, 1974, p. 24).

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James G. Harlow, President of West Virginia University, has stated well the need for broad, general education as a primary goal, though not disclaiming the needs for vocational education:

The concern of society that public education "pay off," that it return benefits proportionate to the large tax investment, is a completely proper concern....

However, I think we will also agree that a high level of technical training and competence can be only a necessary but not sufficient condition for the survival of our graduates in the world and indeed for the survival of the world itself. The demand that society makes upon the university for highly trained individuals is a reflection of a high rate of technological change occurring in society. You are well aware that the rate of change is so rapid as to make a narrow vocational program a short cut to obsolescence. I believe it is necessary for the university to educate for the future rather than to train for the present. Education is essentially an investment in people for which it is not always easy to account within a single fiscal year (1974,pp. 8-9).

The critics of vocationalism contend that most entry-level positions do not require specialized skills--that such skills can be gained on the job-- and that a broad liberal education is less confining and increases the student's ability to assimilate new ideas and skills. Beyond the value of learning to "think," advocates of liberal arts profess the necessity of value considerations for preparation for effective living today.

Perhaps a great deal of the disenchantment with general education or the liberal arts curriculum is not with the ideals of such an education, but with the present shortcomings of liberal arts and general education programs.

It is highly questionable whether the general education movement of the 60's unified knowledge and encouraged the development of the thought processes as it was hoped it would do. A sizeable amount of higher education instruction is supposedly for the purpose of training people in the use of concepts and in problem-solving skills. But these goals are often not achieved. Probably much instruction in the traditional liberal arts disciplines is no more demanding of the higher mental processes, and no less dependent on rote learning, than occupation-related instruction.

Another criticism of current general education stems from the fact that often faculty members are specialists to the point that many of them are unable to offer students the ingredients of a broad liberal education. Rather, they tend to teach specialization in their particular area.

Courses purportedly designed to enlarge the intellectual skills of the student and to encourage new perspectives often become effective barriers to independent thought. In addition to failing to contribute to the students' intellectual development, these courses also reinforce in his mind the value placed on specialized thought and the importance of developing some specialized skills of his own (Korn, 1968, pp. 284-35).

Vocationalism and Liberal Arts or General Education

The discussion raises a question as to whether it is feasible to maintain the ideals of liberal arts education while incorporating practical career preparation curricula into the system. A number of means toward this goal have been suggested:

I. Improved career guidance programs have been one often cited means of meshing the goals of liberal education and career preparation. Lester Hale, at the University of Florida, has offered one of the most comprehensive plans

for improved carear guidance. He has noted that a university cannot possibly change its structure or its departmental course offerings rapidly enough to keep pace with the appearance of new careers and the changes of the job market. "An institution can give an instant response, however, by creating a well-conceived career guidance program in which educational options can be tailor-made to individual student needs, provided there is also adequate flexibility in curricular requirements that will permit inter-departmental and inter-collegiate or even inter-institutional degrees (Hale, 1974, p. 36). In addition to advocating capable faculty advisors, Hale advocates the formation of a centralized career counseling, planning, and placement service focusing on all aspects of career counseling, from self-evaluation and vocational assessment, through vocational information and curricular planning, and ultimately to job placement. Finally, Hale recommends that for the ditimate success of such a program, career education should be provided on a credit basis.

A number of educators suggest that many liberal arts majors have not yet been exploited in terms of their potential vocational possibilities. The April 1974 issue of The Modern Language Journal includes a report on an extensive survey of career opportunities available to graduates of foreign language curricula (McGrath, 1974a, p. 290). The report contains, not only facts on job opportunities, but also recommendations on practical steps language departments can take to prepare students for a variety of positions. Similar studies in other liberal arts fields have been urged. They would probably reveal comparable opportunities for employment not now exploited. In other words, students need to be helped to understand the potential vocational applications of the basic arts and sciences, as well as of study directly related to a single occupational field.

II. Increased cooperative education has been another alternative stressed as a meahs of making higher education more "relevant" to the career aspirations of students. Over 400 schools now offer some form of co-operative education. At some schools, such as Antioch College, Wilberforce University in Ohio, and Northeastern University in Boston, co-operative program participation is mandatory. Such programs enable students to rotate between full-time campus study and full-time work with a cooperating employer. The value of co-operative education for students is not money but experience. The primary benefit of such programs to employers are opportunities to handpick and pre-train prospective employees. According to Roy Beaton, a General Electric vice president, "some medium-sized companies are obtaining at least half of their college-graduate recruits from students who were in work-study programs (U. S, News and World Report, 2/19/73, p. 73)."

One criticism of cooperative education is that students are pushed into occupations before they are prepared to make the decision; however, advocates of career education believe that offering cooperative education programs provides the opportunity for students to assess their interests and skills and to get a realistic preture of career possibilities while there is still time to change educational plans (Dawson, 1973, pp. 2-3).

III. Along the same lines as those arguing for cooperative education, Joseph Katz, of the Institute for the Study of Human Problems at Stanford University, values more integration of the worlds of business and industry and higher education. This might be accomplished, according to Katz, through greater use of non-academicians in higher education,

...people with a particularly exemplary knowledge of their own occupational field, who are able to communicate it, or people who have an outstanding knowledge of an area outside of their

occupation....They would benefit the students not only through their intellectual knowledge and skills, but also through what they stand for as people (Katz et al, 1968, p. 432).

- IV. Another possible means of incorporating the goals of liberal education—the attainment of "thinking" skills and social awareness and adaptability—and career preparation is to provide vocationally oriented programs which provide students with "knowledge" rather than mere "training," in essence encompassing general education in programs emphasizing broad career areas. Learning exercises consisting of repetitive how—to—do—it techniques and, memorization certainly don't meet this standard. However, instruction could conceivably provide both sufficient general knowledge, even in a technical field, to enable the student to apply what he or she learns to the wide variety of circumstances in which it might later be needed, and prepare students to extend their competence as new knowledge and skills emerge—learn how to learn (McGrath, 1974b, p. 25).
- V. The meshing of vocational and liberal arts might also be achieved through curricular rearrangements in which the basic theoretical structure of general knowledge would be organized on an interdisciplinary basis in relation to the major life problems which all people encounter in our society. These general studies would then be paralleled by, and whenever possible integrated with, instruction related to an occupation or occupations (McGrath, 1974a, p. 288) VI. Another viewpoint suggests that liberal arts and vocationalism can and must co-exist. The present increase in interest in "training" may be a natural reaction in accordance with the needs of our changing student body composition, many students coming from disadvantaged backgrounds. Lyman Glenny has pointed out that Maslow's hierarchy of needs seems to apply here--that until certain essential physical needs are met, intellectual pursuits are

bound to take second place. For the middle-class or upper middle-class student--the traditional college goers--physical and economic needs are well met. That type of student will continue to enroll in liberal arts programs. The "new" student is more interested in how to improve his personal economic status. But this is a student who will later become a more economically secure adult, and may then seek, as do middle-class students, psychological reinforcement and aesthetic satisfaction--a very likely candidate for continuing education if opportunities are readily available (Glenny, 1973, p. 9).

The results of the Carnegie Commission Survey of Students and Faculty (1969) seem to substantiate Glenny's theory of need satisfaction: The Commission found that when students were classified by family income, those from relatively well-to-do families, were especially likely to respond that training and skills for an occupation were not an important goal, while at lower income levels such training gained increasing importance to students (1973a, p. 172). This seems to imply that opportunities for higher education should be available to persons throughout their lifetimes and not instantially after high school. Work and study could be mixed throughout a lifetime, reducing the distinct differences in the roles of students and workers and of various age groups.

More and more jobs are requiring not only basic skills and knowledge, but also a willingness to keep on learning. More people are experimenting with several occupations during their lifetimes and need more opportunities to learn new skills. Also as our culture has changed to allow people more leisure time later in their lives, people are seeking more variety of experiences through travel; cultural opportunities, continuing education, etc. Students should be able to choose liberal arts and/or career training, in whatever order meets their needs.

This solution through coexistence rests on the assumption that both liberal arts and vocationally oriented education programs are desirable-that diversity in programs is necessary in order to fulfill the various needs of students and society. Institutions of higher education cannot and should not try to be all things to all people. Each institution should decide upon goals of its own, upon what kind of students it hopes to attract, how it plans to "educate" them, etc. If liberal arts programs and vocationally oriented programs are to co-exist--if diversity of higher education programs is to be maintained in our society, the question arises as to who should be responsible for the various kinds of educational opportunities to be Many leaders in education and government advocate more statewide planning for such determination. If the community and technical colleges become increasingly more vocationally oriented, they may be able to relieve senior colleges and universities of such program responsibilities. [However, this trend is confused by a simultaneous drift toward expansion of some vocational programs from two to four years. This trend of expanding the length of vocational programs reinforces the credentialling function of institution's of higher education, a highly suspect and much criticized function. Both credentialling and expansion of educational requirements of vocationally oriented programs need to be carefully evaluated in terms of actual job requirements. If on-the-job training has been adequate in the past, is training in an educational institution necessary now? If an associate degree program has been adequate in the past, is there real value to be achieved in expanding the program to four years (Gilli, 1975, p. 28)? A final solution suggested is one which incorporates much of the foregoing solutions -- a movement toward "career education." The Chief State School Officers, assembled in Washington on June 13, 1974, accepted a réport

from its Committee for Career Education in which the following statement was ratified:

Career Education is essentially an instructional strategy, aimed at improving educational outcomes by relating teaching and learning activities to the concept of career development.

Career Education extends the academic world to the world of work. In scope, Career Education encompasses educational experiences beginning with early childhood and continuing throughout the individual's productive life. A complete program of Career Education includes awareness of self and the world of work, broad orientation to occupations (professional and non-professional), in-depth exploration of selected clusters, career preparation, an understanding of the economic system of which jobs are a part, and placement for all students (Marland, 1974, pp. 105-06).

In <u>Career Education</u>, Marland identified some states making definite changes toward career education (1974, pp. 155-60). Georgia, Texas and California are making changes primarily at the elementary and secondary levels, but they emphasize that the concept applies at all levels. Oregon is making changes at <u>all</u> levels, including postsecondary. Another example of change toward career education at the postsecondary level is at Columbia University. In 1973, Columbia University launched a major reform in its general education program so that undergraduates would receive more technical, career-oriented offerings, while graduate students in the professions would receive more attention in the humanities. Claremont College in California, has also made changes toward a more career-oriented educational program. Even Chatham College in Pittsburgh, a long-time liberal arts college for women, has re-oriented its philosophy toward career education. A brochure from the Director

of Admissions in 1974 described Chatham to prospective students:

"The fact is that the business world... wants the leadership skills of Chatham women--skills developed through rigorous training in the liberal arts. Examples? The ability to think critically and analyze assumptions. To communicate precisely and effectively. To bring a sense of cultural and historical perspective to problem solving... The only trick is striking a balance between academic and actual work experience.... Our students can take career internships in business and nonprofit organizations all over Pittsburgh.... Internships help to give our students the 'real-world' experience needed to make intelligent, confident career decisions.... Each program covers a broad range of possible careers (Manland, 1974, p. 221).

Conclusion

In spite of a lack of substantial statistical data on the subject, the foregoing certainly provides evidence that higher education must change and probably will become more vocationally oriented, however, hopefully, not at the expense of the goals of liberal arts education. There appear to be a variety of steps which can and should be taken to enhance the employability of graduates of our institutions without jeopardizing the traditional goals of education, such as learning how to learn and inculcating in students a broad understanding of the society in which they live, an ability to adapt to change, to think, to create. Such steps might include greater curricular flexibility, including more interdisciplinary course offerings, cooperative education and internship programs, greater integration of our institutions with our society through use of non-academicians in the classroom and through encouraging Pife-long patterns of formal education, and more realistic and

comprehensive career counseling and education.

We must also keep in mind that liberal arts curricula and high level, vocationally-oriented university programs, even modified to be more relevant to the world of work, will still not provide suitable higher education for all students. Diversity of education programs among and within institutions appears to be essential in order to provide desirable options for all students of all ages. The long-term desirability of a broad/liberal arts education that enables one to adapt effectively to our changing society and to take advantage of "training" quickly and easily is recognized; however, creativity, advancement of knowledge and an in-depth understanding of our world are not the ideals of all students--at least not at the same point in life. The option of "training" exclusively as preparation for a career should be available to students; however, such programs may not necessarily belong in our universities and colleges, but rather in training centers--in two-year schools, technical institutes, or in the businessindustry-government complex. To students who choose such programs, continuing education programs in colleges and universities should be available. This would enable them to achieve more broadly based educational goals later in life or not at all, depending upon personal readiness for such education.

TABLE
NUMBER AND PERCENTAGES OF TOTAL FIRST-TIME FRESHMEN AT
WEST VIRGINIA UNIVERSITY AND NATIONALLY
BY MAJOR FIELD AREA

•	1972-73 % #		West Vinginia 1973-74 % #		University 1974-75 % #		1975-76 % #		Nationally* 1975	
Agriculture & Foresty	9%	254	10%	350	11%	354	13%	439	·.	4%
Arts & Sciences Bilogy Chemistry English Foreign Languages Geology History Mathematics Physics Political Science	38% 9% 1% 1% 1% .3% .1% .2%	1,113 255 43 19 22 10 3 34 6	35% 10% 2% .2% .4% .2% .5% 1% .2%	1,116 323 58 12 8 17 32 6 56	35% 8% 2% .5% .5% .4% 1% .4% 3%	1,164 259 51 17 18 12 19 26 15 86	37% 7% 1% .2% .3% .3% .4% .2%	1,289 229 51 6 6 9 11 14 7	•	7% .5% 2% 1% .5% 1% 2% .4% 2%
Psychology & Philosophy Speech Statistics &	2% 1%	45 16	2% .2%	49	2% .1%	73 ·4		52 4	-/	4% .1% 2% .
Computer Science Other	- 1% 21%	21 [°] 613	1% 16%	20 521	1% 17%	29 555	1% 23%	39 800	-	16%
Education - "	. 7%	191	. 7%	227	5%	172	3%	120		10%
Family Resources	2%	57	. 2% -	. 72	2%	81	1%	39	,	1%
Social Work	2%	48	1%	37	2%	[^] 62	1%	35	•	1%
Journalism 🖜	3%	99	4%	125•	4%.	117	3%	109		3%
Business & Economics ,	. 8%	231	9%	288	9%	301	10%	345	o	12%
Creative Arts	6%	172	6%	18 9 . •	. 6%	189	5%	184	* *	7%
Health Science	18%	517	18%	574	. 16%	5,16	14%	471	•	16%
Engineering 💉	8%	<u>178</u>	8%	216	10%	<u>271</u>	12%	<u>298</u>		7%
Totals	100%	2,900	100%	3,203	100%	3,283	100%	3,446	•	<i>'</i>

^{*}Approximate percentages of 607,819 students who were graduated from high school in 1975 by intended field of study in college. The data were gathered by the College Entrance Examination Board from students who took the Scholastic Aptitude Test in 1974-75 and were reported in The Chronicle of Higher Education, September 15, 1975, p. 19.

BIBLOGRAPHY

- ACE/UCLA Cooperative Institutional Research Program. <u>Summary of data on entering freshmen for fall 1973</u>. ACE Office of Research.
- Besse, R. The case for pluralism and diversity in higher education. Higher Education, human resources and the national economy, address and discussion papers from the 60th annual meeting of the Association of American Colleges. Washington, D.C., April 1974.
- Carnegie Commission on Higher Education. <u>College graduates</u>, <u>and jobs</u>, <u>adjusting to a new labor market situation</u>. New York: McGraw-Hill, 1973.
- Carriegie Commission on Higher Education. The purposes and the performance of higher education in the United States, approaching the year 2000.

 New York: McGraw-Hill, 1973.
- Catching on at colleges: earning while learning. <u>B. S. News and World</u> Report, 1973, 74, 72-73.
- College Placement Council. Four-year liberal arts graduates: their utilization in business, industry, and government. Bethlehem, Pa.: College Placement Council, 1975.
- Dawson, J. College goals for cooperative education. <u>Journal of Cooperative Education</u>, 1973, 9, 1-5.
- Fields of study chosen by students. The Chronicle of Higher Education, Setpember 15, 1975, 19.
- Gilli, A. Vocational associate degrees: their place in the universities.

 <u>Community and Junior College Journal</u>, 1975, 45, 28-29, 34.
- Glenny, L. Pressures on higher education. <u>College and University Journal</u>, 1973, 12, 5-9.
- Hale, L. A bold new blueprint for career planning and placement. <u>Journal</u> of <u>College Placement</u>, 1973, 34, 34-40.
- Harlow, J. After-dinner speech at the conference on general education. January 18, 1974.
- Hitchcock, J. The new vocationalism. Change, 1973, 5, 46-51.
- James, D. and Decker, R. Does business student preparation satisfy personnel officers? Collegiate News and Views, Spring 1974, 26-30.
- Katz, J. et al. No time for youth--growth and constraint in college students. San Francisco: Jossey-Bass, 1968.
- Knierim, K. Major field trends of first-time freshmen 1972-73 to 1975-76.
 West Virginia University Office of Institutional Research, December 3, 1975.



- Knierim, K. Reasons given by students who withdrew applications for admission to West Virginia University. West Virginia University Office of Institutional Research, June, 1975.
- Korn, H. Careers: choice, change, or inertia: No time for youth--growth and constraint in college students. San Francisco: Josey-Bass, 1968.
- Marland, S. <u>Career education</u>. New York: McGraw-Hill, 1974.
- McGrath, E. Careers, values and general education. <u>Aiberal</u> <u>Education</u>, 1974, 60, 281-303.
- McGrath, E. The time bomb of technocratic education. Change, 1974, 6, 24-29.
- Millard, R. Address before the Northeast Association of Secondary and Higher Schools, December 3-6, 1972. Iowa City: ACT Program.
- Truman, D. The necessity of high literacy. The Chronicle of Higher Education, December 2, 1974, 24.
- University of Houston, Academic Planning Staff. Perceptions of existing and desired university goals—the results of the institutional goals inventory survey of faculty, students, administrators, and alumni. University of Houston, 1974.